

What is claimed is:

1. An electrically conductive electrochemical cell component comprising:

- (a) a first coolant plate and an adjacent plate, wherein the adjacent plate is a second coolant plate or a bipolar plate;
- (b) the first coolant plate comprising at least one mating region for mating with a complementary region on the adjacent plate; and
- (c) the first coolant plate and the adjacent plate each comprise a polymer and conductive filler; and

wherein the first coolant plate is joined to the adjacent plate by a seal formed by the polymer at the mating region and the complementary region.

2. The cell component of claim 1, wherein the polymer is a thermoplastic polymer selected from the group consisting of melt processible polymers, partially fluorinated polymers, thermoplastic elastomers, liquid crystalline polymers, polyolefins, polyamides, aromatic condensation polymers, and mixtures thereof.
3. The cell component of claim 2, wherein the polymer is a blend of about 1 wt% to about 30 wt%, preferably about 5 wt% to about 25 wt%, of maleic anhydride modified polymers with the thermoplastic polymer, partially fluorinated polymers and liquid crystalline polymer or mixtures thereof.
4. The cell component of any one of claims 1-3, wherein the first coolant plate and adjacent plate comprise a composition of graphite fiber, polymer and graphite powder.
5. The cell component of any one of claims 1-4, wherein the mating region comprises a first rib and the complementary region comprises a second rib or a groove.

6. The cell component of claim 5, further comprising a polymer rich layer on one or both of the ribs or the groove.
7. The cell component of claim 6, wherein the polymer rich layer comprises between about 25 wt% and about 100 wt% polymer, preferably between about 50 wt% and about 100 wt% polymer, and most preferably about 100 wt% polymer.
8. The cell component of any one of claims 1-7, wherein the mating region and the complementary region are located adjacent to the periphery of the first coolant plate and the adjacent plate.
9. The cell component of any one of claims 1-7, wherein the first coolant plate and the adjacent plate each comprise at least one manifold hole and the mating region and the complementary region are at the periphery of the manifold holes.
10. The cell component of any one claims 1-9, wherein the first coolant plate and the adjacent plate each comprise at least one flow field channel.
11. The cell component of any one of claims 1-10, wherein the cell component has a contact resistance less than the contact resistance of two plates that are not joined together.
12. The cell component of any one of claims 1-11, wherein the cell component has a contact resistance that is independent of compression pressure applied to the cell component.
13. An electrically conductive electrochemical cell component comprising:
 - (a) a first coolant plate joined to an adjacent plate;

- (b) the first coolant plate comprises at least one mating region for mating with a complementary region on the adjacent plate, and the adjacent plate is a second coolant plate or a bipolar plate of a fuel cell;
 - (c) the first coolant plate and the adjacent plate each comprise a polymer/conductive filler composition; and
 - (d) the mating region is welded to the complementary region to create a seal formed by the polymer at the mating region and the complementary region.
14. The cell component of claim 13, wherein the polymer is a thermoplastic polymer selected from the group consisting of melt processible polymers, partially fluorinated polymers, thermoplastic elastomers, liquid crystalline polymers, polyolefins, polyamides, aromatic condensation polymers, liquid crystalline polymers and mixtures thereof.
15. The cell component of claim 14, wherein the polymer is a blend of about 1 wt% to about 30 wt%, preferably about 5 wt% to about 25 wt%, of maleic anhydride modified polymers with the thermoplastic polymer, partially fluorinated polymers and liquid crystalline polymer or mixtures thereof.
16. The cell component of any one of claims 13-15, wherein the polymer/conductive filler composition of the first coolant plate and the adjacent plate comprise graphite fiber, polymer and graphite powder.
17. The cell component of any one of claims 13-16, wherein the mating region comprises a first rib and the complementary region comprises a second rib or a groove.
18. The cell component of claim 17 further comprising a polymer rich layer one or both of the rib or the groove.

19. The cell component of claim 18 wherein the polymer rich layer comprises between about 25 wt% and about 100 wt% polymer, preferably between about 50 wt% and about 100 wt% polymer, and most preferably about 100 wt% polymer.
20. The cell component of any one of claims 13-19, wherein the mating region and the complementary region are located adjacent to the periphery of the first coolant plate and the adjacent plate.
21. The cell component of any one of claims 13-19, wherein the first coolant plate and the adjacent plate each comprise at least one manifold hole and the mating region and the complementary region are at the periphery of the manifold holes.
22. The cell component of any one claims 13-21, wherein the first coolant plate and the adjacent plate each comprise at least one flow field channel.
23. The cell component of any one of claims 13-22, wherein the cell component has a contact resistance less than the contact resistance of two plates that are not joined together.
24. The cell component of any one of claims 13-23, wherein the cell component has a contact resistance that is independent of compression pressure applied to the cell component.
25. An electrochemical cell comprising the cell component of any one of claims 1-24.
26. A fuel cell stack comprising a plurality of the electrochemical cells of claim 25.